

## CLAIMS

1. A porous hollow fiber, comprising a vinylidene fluoride resin having a weight-average molecular weight of at least  $3 \times 10^5$ , having a water permeation rate  $F$  ( $\text{m}^3/\text{m}^2 \cdot \text{day}$ ) measured at a pressure difference of 100 kPa and at a water temperature of  $25^\circ\text{C}$  in a range of test length  $L=0.2-0.8(\text{m})$  and expressed in a linear relationship with the test length  $L$  of:  $F=C \cdot L+F_0$  (formula 1) and satisfying requirements (a)-(d) shown below:
  - (a) a average slope  $C$  (/day) of:  $-20 \leq C \leq 0$ ,
  - 10 (b) an intercept (basic permeability)  $F_0$  ( $\text{m}^3/\text{m}^2 \cdot \text{day}$ ) of:  $F_0 \geq 30$ ,
  - (c) a relation between  $F_0$  ( $\text{m}^3/\text{m}^2 \cdot \text{day}$ ) and an average pore diameter  $P$  ( $\mu\text{m}$ ) according to half-dry method of  $F_0/P \geq 300$ , and
  - (d) an outer diameter of at most 3 mm.
- 15 2. A porous hollow fiber according to claim 1, further satisfying a relationship of :  $F_0/D_i^4 \leq 75$  between the basic permeability  $F_0$  ( $\text{m}^3/\text{m}^2 \cdot \text{day}$ ) and an inner diameter  $D_i$  (mm) of the hollow fiber.
- 20 3. A porous hollow fiber according to claim 1 or 2, comprising a vinylidene fluoride resin having a weight-average molecular weight of at least  $4 \times 10^5$ .
4. A porous hollow fiber according to any one of claims 1-3, comprising a vinylidene fluoride resin having a ratio  $M_w/M_n$  of at least 2.0 between a weight-average molecular weight ( $M_w$ ) and a number-average molecular weight ( $M_n$ ) thereof.
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5. A porous hollow fiber according to claim 4, wherein the vinylidene fluoride resin comprises 2-49 wt.% of a first vinylidene fluoride resin having a weight-average molecular weight ( $Mw_1$ ) of  $4 \times 10^5$ - $12 \times 10^5$  and 51-98 wt.% of a second vinylidene fluoride resin having a weight-average molecular weight ( $Mw_2$ ) of  $1.5 \times 10^5$ - $6 \times 10^5$  provided that the weight-average molecular weight ( $Mw_1$ ) of the first vinylidene fluoride resin and the weight-average molecular weight ( $Mw_2$ ) of the second vinylidene fluoride resin satisfy a ratio  $Mw_1/Mw_2$  of at least 1.2.
6. A porous hollow fiber according to any one of claims 1-5, having an inner diameter of 0.8-2.98 mm and a wall thickness of 0.01-0.4 mm.
7. A process for producing a porous hollow fiber of vinylidene fluoride resin, comprising : providing a composition by adding, to 100 wt. parts of a vinylidene fluoride resin having a weight-average molecular weight of at least  $3 \times 10^5$ , a plasticizer and a good solvent for vinylidene fluoride resin in a total amount of 100-300 wt. parts so that the good solvent occupies 8-22 wt.% therein ; melt-extruding the composition into a form of hollow fiber; introducing the hollow fiber into an inert liquid while injecting an inert gas into a hollow part thereof to cool and solidify the hollow fiber; and extracting the plasticizer to recover a porous hollow fiber.
8. A process according to claim 7, further comprising a step of stretching before or after the extraction of the plasticizer.